

KENTUCKY ROUTE 5272 BRIDGE
Spanning Whippoorwill Creek
Licksillet Vicinity
Logan County
Kentucky

HAER No. KY-27

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PHOTOGRAPHS

WRITTEN HISTORIC AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Southeast Region
Department of the Interior
Atlanta, Georgia 30303

Historic American Engineering Record

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KENTUCKY ROUTE 5272 BRIDGE

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Location: Spanning Whippoorwill Creek at
Lickskillet in Logan County,
Kentucky

UTM: Easting: 16-501920
Northing: 16-4065600

Date of Construction: 1880

Present Owner: Kentucky Transportation Cabinet
State Office Building
Frankfort, Kentucky 40622

Significance: The Lickskillet Bridge is an early representative
of an engineering type technology popular through-
out Kentucky during the last quarter of the 19th
and first part of the 20th century. Constructed
in 1880 it is one of few wrought iron bridges
extant in the State, and the only structure
built by the Pennsylvania Bridge Works documented.

Historian: Jayne Henderson Fiegel

The KY 5272 Bridge has been determined eligible for the National Register of Historic Places. The pony truss structure, presently owned by the Kentucky Department of Transportation, is scheduled for replacement. The bridge will be moved to the nearby community of Auburn, for use as a pedestrian footbridge in an urban park.

This historic bridge, located in southern Logan County, crosses Whippoorwill Creek near the tiny rural community of Lickskillet. Whippoorwill Creek is drained by the Red River, a major tributary in southwestern Kentucky. KY 5272 is a two-lane secondary state route.

The bridge at Lickskillet is a one-lane, metal Pratt Pony Truss. The span is eleven feet, two inches wide and has a total truss length of sixty-two feet. Constructed by the Pennsylvania Bridge Works of Beaver Falls in 1880, it is the oldest Pratt Pony Truss in Kentucky, and the only one constructed by this bridge company. Its pre-1885 date suggest that wrought iron is the construction material.

The Pratt Truss, patented by Thomas and Caleb Pratt in 1844, was the most popular truss type constructed during the late 19th and early 20th century. The earliest Pratt Trusses were composed of wooden compression posts and wrought iron tension members. Eventually, the entire structural system was metal, first cast and wrought iron, and then steel. The Pratt Through Truss was capable of spanning longer distances and bearing greater loads.

Pratt Pony Trusses, low pony trusses without top lateral bracing, were used for economical reasons. When the requirements of weight and length of a particular crossing could be met by short spans of limited weight capacity, then Pratt Ponies were used.

On all truss spans the end posts and top chord act in compression with the bottom chord in tension. In a truss, unlike a rigid arch, at least one bearing point at the abutment must be able to expand or move. In the Pratt truss, the verticals between the end posts go into compression to keep the top chord from collapsing, and the diagonals act in tension to support the deck. However, the first vertical member (hip-vertical) next to the inclined end post must be placed in tension to support the deck when a load first enters the bridge.

Pratt trusses have both diagonals and counters in the web system acting in tension. Inclined members that are not parallel to the nearest end post are called diagonals. Inclined members parallel to the nearest end post are called counters. Diagonals support the dead load of bridge weight and the live load of traffic. Counters support only the live load of the bridge. Counters always intersect with a diagonal between two panel points (or floor beams) of the bridge.

Counters accept or counteract the live load support from the diagonals as a load moves across the bridge. Tension support for the deck goes from a diagonal past the compression post, which is released as a load passes, to the next counter or diagonal. When a load passes an interior compression post and it is released, the compressive stress is thrown into the adjacent compression posts or end posts to keep the top and bottom chords apart.

The compression members of a Pratt truss must be rigid and of sturdy construction. On the KY 5272 Whippoorwill Creek bridge, the end post and top chords are constructed of 2 channels, cover plate and stay bars. The intermediate posts are paired angles and lattice bars. The main tension members on the KY 5272 bridge are as follows: bottom chords are 2 rectilinear die-forged eyebars, hip-verticals are paired angles with lattice bars, diagonals are two round rods with stirrups (these appear to be replacements). A new guard rail was also added, probably the same time the diagonals were replaced.

The floor system of the KY 5272 bridge has rolled I-beam floor beams and stringers. The deck is corrugated metal with one inch asphalt overlay and the abutments are ashlar cut stone blocks.

A small rectangular bridge plate on the northeast end of the top chord displays "Penn Bridge Works, Builder, Beaver Falls, PA 1880". This pre-1885 erection date indicates that wrought iron is the construction material.

The "Survey of Truss, Suspension and Arch Bridges in Kentucky" completed in 1982 identified 65 Pratt Ponys throughout the State and forty percent of these, including the Lickskillet bridge, are pin-connected. Parts of the bridge are riveted for stability. The earliest riveted Pratt Pony documented, was built in 1898 and most of the riveted spans were built in the 1920's and 1930's by the Kentucky Department of Highways.

The KY 5272 Bridge over Lickskillet Creek is eligible for the National Register of Historic Places under Criteria C. The structure is an early representative of a engineering type of technology popular throughout Kentucky during the last quarter of the 19th and first part of the 20th centuries. Constructed in 1880, it is one of few wrought iron bridges extant in the State, and the only structure built by the Pennsylvania Bridge Works.